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Prevalence of cheilitis in health care workers treating patients with COVID-19

To the Editor: The COVID-19 pandemic heralded the use of personal protective equipment (PPE) by front-line health care workers (HCWs) working tirelessly for long hours. The extended use of PPE has led to various kinds of occupational dermatoses, including facial dermatitis, pressure injury, acne, and frictional injury, in up to 97% of HCWs.[1,2] In this study, we report preliminary data of HCWs experiencing various types of cheilitis due to the use of face masks.

From April 15 through May 15, 2020, we came across 33 HCWs, engaged in COVID-19 duties, who complained of dryness, itching, smarting, and/or tightness of the lips after the use of face masks. The history, occupation, and clinical features including onset, duration, pattern of cheilitis, exacerbating factors, and duration of PPE worn were recorded, and final clinical diagnosis was made. Patch testing could not be performed.

In the 33 HCWs, the most common presenting symptoms were tightness (63.64%) and chapping (57.57%), followed by burning sensation, smarting, and itching. The most common signs were flaking 24 (72.73%), scaling 15 (45.46%), and swelling 13 (39.39%). Generalized lip dryness, that is, cheilitis simplex (n = 21, 63.64%), was the most frequent pattern of cheilitis. Angular cheilitis was seen in 12 patients (36.36%), whereas progression to perioral involvement was seen in 5 patients (15.15%). Cheilitis venenata was observed in 10 (30.30%) patients, attributed here to N95 mask contact. Associated lip edema was present in 7 patients (21.21%). Secondary infections (27.27%) and hyperpigmentation (18.18%) were the most common sequelae (Supplemental Fig 1; available via Mendeley at https://doi.org/10.17632/655bpmbggv.1). Spicy food and hot beverages (n = 26, 78.79%) were the most common aggravating factors, followed by habitual picking/peeling (51.52%) and associated contact dermatitis to N95 masks (30.30%). Most of the HCWs admitted to extended work hours, with a mean of 8.92 ± 2.15 hours of face mask worn per day and 5.01 ± 1.11 hours of rotation per day (Table I). The patients were treated with liberal use of bland emollients and counseling to eliminate inciting factor(s) and break the wet-dry cycle by repeated application of saliva. Topical corticosteroids, topical calcineurin inhibitors, oral antihistamines, antibiotics, and vitamin B supplements were used as and when justified.

Table I. Summary of demographic and clinical features, causative agents, and treatments

Parameters	Value	%
Number of patients	33	—
Age, y, mean ± SD	32.28 ± 16.67	—
Sex, male:female	14:19	—
Occupation		
Doctors	11	33.33
Nurses	12	36.36
Allied services (ward assistants, cleaners, transport teams, etc)	4	12.12
Symptoms		
Burning sensation	13	39.39
Smarting	8	24.24
Itching	9	27.27
Tightness	21	63.64
Chapping	19	57.57
Signs		
Flaking	24	72.73
Scaling	15	45.46
Fissures	13	39.39
Perioral accentuations	5	15.15
Swelling	12	36.36
Pattern of cheilitis observed		
Cheilitis simplex	21	63.64
Angular cheilitis	12	36.36
Perioral involvement	5	15.15
Cheilitis venenata	10	30.30
Type of cheilitis		
Irritant contact dermatitis	24	72.73
Allergic contact dermatitis	3	09.09
Friction dermatitis*	6	18.18
Associated sequelae		
Hyperpigmentation	6	18.18
Secondary infection	9	27.27
Photosensitivity	8	24.24
Exacerbating factors		
Habitual peeling/picking: exfoliative cheilitis	17	51.52
Aggravation due to spicy food/hot beverages	26	78.79
Duration of PPE worn/d, h, mean ± SD	8.92 ± 2.15	—
Duration of rotation/d, h, mean ± SD	5.01 ± 1.11	—
History of dermatitis/allergic predisposition		
Atopy	2	06.06
Asthma	6	18.18
Food allergies	4	12.12
Lipstick/lip products allergy	5	15.15
Contact dermatitis to components of PPE		
Gloves	5	15.15
Gown	4	12.12
Face shield	1	03.03

Continued

Table I. Cont'd

Parameters	Value	%
Face mask (including straps, nose piece, and the body)	12	36.36
N95 masks	8	66.67
Surgical masks	2	16.67
Homemade fabric masks (dye dermatitis)	2	16.67
Medications prescribed		
Barrier emollient	31	93.94
Topical corticosteroid	3	09.09
Topical calcineurin inhibitor	9	27.27
Topical antibiotic	9	27.27
Oral antihistamine	11	33.33
Vitamin B complex supplements	14	42.42

PPE, Personal protective equipment; *SD*, standard deviation.
*Friction dermatitis may be caused by the constant rubbing by mask or by sweat wiping.

Our study denotes generalized lip dryness to be the most common presentation of lip cheilitis, which might progress to perioral involvement.

PPE forms the major armamentarium for HCWs' protection in the fight against COVID-19. PPE-induced dermatoses lead to frequent irritation and subsequent touching of the face, which might increase disease transmission.[3] The inadequate workforce, coupled with a relative shortage of PPE kits, results in the long duty hours of the HCWs and leads to constant chapping of the lips. An unconscious repeated contact with saliva follows, which macerates the skin and removes the protective oils, leading to a constant wet-dry cycle and resulting in disruption of skin barrier function and inflammation, which further perpetuates the cycle. Dehydration, air-conditioned rooms, and the humid environment created by the PPE also contribute (Supplemental Fig 2; available via Mendeley at https://doi.org/10.17632/phwh6mj87y.1).

The authors would like to suggest that HCWs liberally use a bland emollient such as petrolatum jelly to moisturize the lips, avoid repeated lip licking, and increase hydration to prevent such occupational dermatoses.

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